That greater speed also had not been usually attained; or that, if attained at all, it must involve "inordinate cost."

The facility for surmounting steeper gradients was questioned, and the inference drawn, that the enormous first cost would confine the application of the atmospheric system to the same narrow limits as were occupied by other stationary systems of traction; and that it must be classed with them only as a means of overcoming lengths of such bad gradients as did not come within the limits of locomotive power, or where the lines were short, and the traffic was great, terminal, and simple.

In adverting to the cost of maintenance of the line, the comparative advantages of the two systems were examined, and it was argued that it was fallacious to compare the expense of keeping up the Dalkey line, which was excavated in rock, and resembled an "uncovered stone drain," with that of maintaining the Dublin and Kingstown Railway, which was a sea-embankment stretching across a part of the bay, and on which the passage of the trains was not unfrequently stopped by the inroad of the waves.

A careful examination was entered into of the difficulty of removing the earth from slips, or doing any of the usual quantity of contractors' work on the line without having recourse to locomotive power; on this point the observation of Monsieur Legrand, the French Minister of Public Works, might be quoted. On his return from inspecting the Dalkey Railway, he said that there could not be any doubts of the applicability of the atmospheric system to some positions, and probably with advantage; "mais après tout il fallait avouer ce n'etait pas *un cheval à la main*, comme la machine locomotive."

Numerous other points were strongly insisted upon: Mr. Robert Stephenson's report was frequently referred to and quoted, and the most eminent engineers were called upon, whether they had adopted or rejected the system, to give the facts and arguments by which their decision had been influenced.

In the discussion which ensued, the theory propounded by Dr. Robinson in his recent examination before the Parliamentary Atmospheric Railway Committee, that "a steady uniform height of barometer had nothing to say to the velocity," or did not indicate, as Mr. Stephenson had stated in his report, "a maximum uniform velocity," was examined, and it was generally admitted that the case which he proposed, in illustration of his theory, was practically impossible, and was entirely irrelevant to the subject. The supposition of the existence of a perfect vacuum in front of the piston would entirely throw aside the question of the uniform action of the machinery, with an accelerating motion of the train, which, it was shewn, must produce an unsteady height of the barometer, the condition of a steady height could not exist unless both the power of the resistances due to the velocity were either equally irregular as regular; in either case an exact balance being maintained.

In Mr. Stephenson's experiments at the Dalkey Railway, the circumstances of regular power and steady height of the barometer were shewn to exist simultaneously, and the inevitable inference was that a regular uniform maximum velocity was attained. Dr. Robinson's case was allowed to have been stated only for the sake of argument before the committee, but a practical inconsistency in Mr. Stephenson's experiments of a steady height of barometer with a slight accelerating velocity, was put forward as condemnatory of his report, on the supposition that it was more practicable to note correctly the velocity of the train than to observe the indication of the barometer, and that the true reason for this slight acceleration was the shortness of the Dalkey line, and that hence no accurate result could be arrived at.

The question of the loss arising from the evolution of caloric in the air-pump due to the condensation of the air, from its rarified condition in the tube to the density of the atmosphere was considered, and was generally admitted to be at least as great as had been stated by Mr. Bergin in the discussion of the subject during the last session.

The further discussion of the question was adjourned until Tuesday evening, the 22nd inst.

THE EVILS OF INTERMENT IN TOWNS.

We mentioned in page 173 that the House of Commons had come to the resolution that the practice of interment in large cities is injurious to the health of the population, and demands the attention of Parliament. The following is a summary of the discussion which preceded it:—

Mr. Macktinnon stated that three years ago, when he first brought forward this subject in Parliament, he had been met with jeers and laughter, and a statement that his notions were quite absurd. There had been a great change of opinion since that time; and a strong feeling now pervaded the country that there was a paramount necessity for making some alteration in our laws with respect to interment. He then referred to the fact that three commissions had been appointed by the Government, and that one committee had been appointed by the House of Commons, to inquire into this subject, and read extracts from the different reports which they had presented, for the purpose of shewing that they had all been of opinion that the practice of interment within the walls of large towns was most injurious to the health of the public. He read a letter which he had received from Mr. Brace, of Surrey-street, Strand, containing some startling particulars as to the abominations of Enon Chapel, and told the House, that if it were of opinion that such a plague-spot should continue in the centre of the metropolis, it would be difficult for it to justify its conduct. There was no other civilized nation in the world in which this practice of interment within the precincts of large towns continued to exist; and he thought it a most disgraceful circumstance that we should persist in a practice so abhorrent to human nature as to bury the dead in the midst of the living.

Sir James Graham said he was aware how closely the subject was connected with the feelings of the humblest classes of the community, and therefore it was that he paused before he legislated on it. The example of foreign countries on this point was inapplicable to our own; for there various artificial means to facilitate the decomposition of dead bodies were employed, which would not be permitted here. It was a difficult thing to say that a man should not be buried where his relations were buried before him; and any legislative measure which should be founded on such an interdict would interfere with warm feelings which ought not to be hastily violated. He looked upon it as a gross exaggeration to say that our practice of interment in our large towns was abhorrent to human nature and made foreigners view us as savages and barbarians. He knew that the practice was said to be incompatible with the public health; but he could scarcely believe the assertion to be well founded, when he reflected that there was no other metropolis in the world in which the state of the public health was so satisfactory as it was in London. He demurred to the assertion that health was endangered by residence near a churchyard, and told the house that the Bishop of London had resided for some years in Bishopsgate-churchyard, and had informed him that he and his large family had never enjoyed better health than they did during their residence in that spot. Mr. Macktinnon had complained of the indecent proceedings in Spafields. He had ordered a prosecution to be commenced against the parties concerned in them; and if the facts were proved, he had no doubt that the law would be able to grapple both with the offence and with the offenders. So, too, in the case of Enon Chapel, which appeared a very fit case for further inquiry. He was afraid that if the House proceeded to put a stop to these proceedings, and also to the practice of intramural interment by any very stringent enactment, public feeling would be strongly excited against it. He did not assert that this subject might not hereafter come under the purview of the Council of Health; but he had carefully abstained from placing it under their jurisdiction in the first instance, lest prejudice should be created against the council by its having such a duty assigned to it. He spoke in terms of warm approbation of Mr. Chadwick's report; but the proposition of that gentleman had convinced him more than any thing else of the difficulty of legislating on this matter. He believed that the adoption of the measures recommended by Mr. Chadwick—namely, the abolition of all private interments, and the undertaking of all burials by the government—would be generally repudiated by the country. He denied that the church was opposed to any alteration in the mode of our interments, and stated that the Bishop of London had turned his attention to the subject and intended, he believed, to introduce a measure upon it. But caution must be observed in adopting it. If he had matured a measure on the subject, he would have introduced it to Parliament; but he had not, and until he had done so, it was his duty to attend to the measures introduced by others.

Mr. Bernal thought that the Government would not be justified in postponing for more than another session a measure for curing some of the evils of the present system. He recommended Sir James Graham to close the cemeteries of the parishes of St. Clement and of St. Anne, and of some other populous parishes in the metropolis, as such a measure would be productive of the greatest benefit to the working classes.

Dr. Bowring said that Spain, Germany, France, and all the countries of the east, had removed their places of interment to a distance from their large towns, and recommended the house to follow their example. He thought that the objection to such a course rested on the fees which the clergy would lose if such a proposition were adopted, and advised the house to buy off their opposition by granting them an adequate compensation.

Lord Mahon, after making reference to his having been a member of the committee appointed to examine into this subject, said that it appeared to him that Sir James Graham had not exaggerated the difficulty of this subject, but that he had greatly underrated its importance. No question was more essential to the health of large towns than that which Mr. Macktinnon had that evening laid before the house. The Government was preparing measures for the better ventilation and draining of large towns; but those measures were but trifles in comparison with that referred to by Mr. Macktinnon. Of what avail would any measures for the better ventilation of a large town be if the air passed through the miasma of crowded churchyards? And of what avail would any measure for its better drainage be, if the water which flowed through the streets were tainted with the drippings and distillations from buried corpses?

The Earl of Lincoln pressed upon the attention of the House the necessity of considering all the difficulties which attended legislation upon this subject. He believed that the feelings of the poor would be found opposed to any plan for removing the place of burial to any distance from their towns and villages.

Sir R. Inglis said that the difficulties with which they were met in attempting to legislate upon this subject arose from the neglect with which the religious polity of England had been treated by every Government for the last century. The remedy was to be found in the extension of the parochial system for the living, and also in its extension for the dead. He thought that parishes ought to be empowered to join and purchase burial-grounds for the poor.

Sir James Graham in addressing the House a second time attempted to shew that the remedies which had been proposed for the present system, and which were founded on the practice of foreign countries, were most of them inapplicable to the present state of society in this country. He thought that it would not be impossible to get over the difficulties of the clergy on this subject; but it, perhaps, would not be so easy to overcome the objections of the Dissenting clergymen, who had burial-grounds attached to their chapels, and who derived from them a benefit which they shared in common with the rest of their congregation. He would gladly aid any member who would bring forward a bill upon this subject; but he had stated to the House the difficulties which environed any legislation upon it, and he confessed that he did not know how to remove them.

The report of a Parliamentary Committee on this subject will be found in The Builder, vol. ii. p. 175.

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